AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A RAKE receiver comprising:

a plurality of RAKE fingers to despread unknown symbols received over multiple paths of a multi-path channel, wherein a first one of said plurality of RAKE fingers comprises a delay corresponding to an unknown symbol of interest and a second one of said plurality of RAKE fingers comprises a delay corresponding to an unknown interfering symbol;

a processor to determine a cross-correlation between the symbol of interest and the interfering symbol based on a code cross-correlation between spreading codes for the symbol of interest and the interfering symbol; and

a combiner to combine the symbol of interest with the interfering symbol using the cross-correlation to reduce intersymbol interference attributable to the interfering symbol from the symbol of interest.

2. (Original) The RAKE receiver of claim 1 wherein said processor estimates channel coefficients for the paths of the multi-path channel and determines the cross-correlation between the symbol of interest and the interfering symbol based on the estimated channel coefficients.

3. Cancel. ~~(Original) The RAKE receiver of claim 1 wherein said processor further computes spreading sequence cross-correlations and determines the cross-correlation between the symbol of interest and the interfering symbol based on the sequence cross-correlations.~~

4. (Original) The RAKE receiver of claim 1 wherein two or more of said plurality of RAKE fingers despread the same symbol received over different paths of the multi-path channel.

5. (Currently Amended) A method of reducing intersymbol interference from an unknown symbol of interest comprising:

despreading unknown symbols received over multiple paths of a multi-path channel, wherein the unknown symbols include an unknown symbol of interest and an unknown interfering symbol;

determining a cross-correlation between the symbol of interest and the interfering symbol based on a code cross-correlation between spreading codes for the symbol of interest and the interfering symbol; and

combining the symbol of interest with the interfering symbol using weighting factors determined based on the cross-correlation to reduce the intersymbol interference attributable to the interfering symbol from the symbol of interest.

6. (Original) The method of claim 5 wherein determining the cross-correlation between the symbol of interest and the interfering symbol comprises estimating channel coefficients for the multiple paths of the multi-path channel and determining the cross-correlation based on the estimated channel coefficients.

7. Cancel ~~(Original) The method of claim 5 wherein determining the cross-correlation between the symbol of interest and the interfering symbol comprises computing spreading sequence cross-correlations and determining the cross-correlation between the symbol of interest and the interfering symbol based on the sequence cross-correlations.~~

8. (Currently Amended) A RAKE receiver comprising:

a plurality of RAKE fingers to despread unknown symbols received over multiple paths of a multi-path channel, wherein the unknown symbols include an unknown symbol of interest and at least one unknown interfering symbol;

a processor to determine cross-correlations between the symbol of interest and the at least one interfering symbol based on code cross-correlations between spreading codes for the symbol of interest and the at least one interfering symbol; and

a multi-channel filter to reduce intersymbol interference attributable to the at least one interfering symbol(s) from the symbol of interest by combining despread symbols from different symbol periods output by said plurality of RAKE fingers using weighting factors determined based on the cross-correlations between the symbols, said multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with a corresponding one of the plurality of RAKE fingers, to weight and combine the despread symbols output by the corresponding one of the plurality of RAKE fingers over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the symbols to generate a plurality of filtered output symbols; and

a summer to combine the plurality of filtered output symbols to generate an estimate for the symbol if interest.

9. (Original) The RAKE receiver of claim 8 wherein said processor further estimates channel coefficients for the multiple paths of the multi-path channel and determines the cross-correlations between the symbol of interest and the at least one interfering symbol based on the estimated channel coefficients.

10. Cancel ~~(Original) The RAKE receiver of claim 8 wherein said processor further computes spreading sequence cross-correlations and determines the cross-correlation between the symbol of interest and the at least one interfering symbol based on the sequence cross-correlations.~~

11. (Original) The RAKE receiver of claim 8 wherein each of said linear transversal filter comprises:

a tapped delay line comprising a series of delay elements to delay the despread symbols output by the corresponding one of the plurality of RAKE fingers;

a plurality of weighting elements to weight corresponding ones of the delayed despread symbols by weighting factors determined based on the cross-correlations to generate weighted output symbols; and

a summer to combine the weighted output symbols to generate the filtered output symbol.

12. (Currently Amended) A method of reducing intersymbol interference from an unknown symbol of interest comprising:

despreading multiple unknown symbols received over multiple paths of a multi-path channel;

determining cross-correlations between the symbol of interest and at least one unknown interfering symbol based on code cross-correlations between spreading codes for the symbol of interest and the at least one interfering symbol;

combining the despread symbols received over the same path during a plurality of symbol periods using weighting factors determined based on the cross-

correlations between symbols to generate a plurality of filtered output symbols; and

combining the filtered output symbols to produce an estimate of the symbol of interest with reduced inter-symbol interference.

13. (Currently Amended) The method of claim 12 wherein determining the cross-correlations between symbols for the symbol of interest and the at least one interfering symbol comprises estimating channel coefficients for the multiple paths of the multi-path channel and determining the cross-correlations between the symbols based on the estimated channel coefficients.

14. Cancel ~~(Original) The method of claim 12 wherein determining cross-correlations between the symbol of interest and the at least one interfering symbol comprises computing spreading sequence cross-correlations and determining the cross-correlation between the symbol of interest and the at least one interfering symbol based on the sequence cross-correlations.~~

15. (Orginal) The method of claim 12 wherein combining the despread symbols received over the same path during a plurality of symbol periods using weighting factors determined based on the cross-correlations between the symbols to generate a plurality of filtered output symbols comprises:

delaying the despread symbols received over the same path in a tapped delay line to generate a plurality of delayed symbols;

weighting each of the plurality of delayed symbols using the weighting factors determined based on the cross-correlations between symbols to generate a plurality of weighted symbols; and

summing the weighted symbols to generate each of the plurality of filtered output symbols.

16. (Currently Amended) A RAKE receiver comprising:

a plurality of RAKE fingers to despread unknown symbols received over multiple paths of a multi-path channel;

a processor to determine cross-correlations between symbols for a symbol of interest and at least one interfering symbol based on code cross-correlations between spreading codes for the symbol of interest and the at least one interfering symbol;

a RAKE combiner to combine the despread symbols received over different paths in the same symbol period to generate RAKE output symbols; and

a second combiner to combine successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the symbols to reduce intersymbol interference attributable to the at least one interfering symbol from the symbol of interest.

17. (Original) The RAKE receiver of claim 16 wherein said processor estimates channel coefficients for the multiple paths of the multi-path channel and determines the cross-correlations between the symbol of interest and the at least one interfering symbol based on the estimated channel coefficients.

18. Cancel ~~(Original) The RAKE receiver of claim 16 wherein said processor further computes spreading sequence cross-correlations and determines the cross-correlation between~~

~~the symbol of interest and the at least one interfering symbol based on the sequence cross-correlations.~~

19. (Original) The RAKE receiver of claim 16 wherein said second combiner comprises:

a tapped delay line comprising a series of delay elements to delay successive ones of the RAKE output symbols to generate a series of delayed output symbols;

a plurality of weighting elements to weight corresponding ones of the delayed output symbols using the weighting factors determined based on the cross-correlations between the symbols to generate weighted output symbols; and

a summer to combine the weighted output symbols to generate an estimate for the symbol of interest.

20. (Original) The RAKE receiver of claim 16 wherein the RAKE combiner comprises a G-RAKE combiner.

21. (Currently Amended) A method of reducing intersymbol interference from an unknown symbol of interest comprising:

despreading multiple unknown symbols from different symbol periods received over multiple paths of a multi-path channel, said multiple symbols including the symbol ~~a symbol~~ of interest and at least one unknown interfering symbol;

determining cross-correlations between the symbol of interest and the at least one interfering symbol based on code cross-correlation between spreading codes for the symbol of interest and the at least one interfering symbol;

RAKE combining the despread symbols received over different paths during the same symbol period to generate RAKE output symbols; and

combining successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the symbols to reduce intersymbol interference attributable to the at least one interfering symbol from the symbol of interest.

22. (Original) The method of claim 21 wherein determining the cross-correlations between the symbol of interest and the at least one interfering symbol comprises estimating channel coefficients for the multiple paths of the multi-path channel and determining the cross-correlations between the symbols based on the estimated channel coefficients.

23. (Original) The method of claim 21 wherein combining successive RAKE output symbols produced over a plurality of successive symbol periods comprises:

delaying successive RAKE output symbols in a tapped delay line to generate a plurality of delayed output symbols;

weighting each of the plurality of delayed output symbols using a weighting factor determined based on the cross-correlations between the symbols to generate a plurality of weighted output symbols; and

summing the plurality of weighted output symbols to generate an estimate for the symbol of interest.

24. (Currently Amended) A multi-code RAKE receiver comprising:

a plurality of parallel RAKE receivers providing RAKE output symbols for a plurality of code channels;

a processor to determine cross-correlations between symbol spreading codes for an unknown symbol of interest and at least one unknown interfering symbol;

a multi-channel filter to combine the RAKE output symbols to reduce interference attributable to the at least one interfering symbol from the symbol of interest, said multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with a corresponding one of said plurality of parallel RAKE receivers, to weight and combine RAKE output symbols output by the corresponding RAKE receiver over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the symbols to generate filtered output symbols; and

a summer to combine the filtered output symbols to generate an estimate of a symbol of interest.

25. (Original) The multi-code RAKE receiver of claim 24 wherein the plurality of RAKE receivers comprise a plurality of G-RAKE receivers.

26. (Original) The multi-code RAKE receiver of claim 24 wherein said processor determines the cross-correlations between the symbols based on channel coefficients corresponding to the multiple paths of the multi-path channel.

27. (Original) The multi-code RAKE receiver of claim 24 wherein each linear transversal filter comprises:

a tapped delay line comprising a series of delay elements to delay successive RAKE output symbols to generate delayed output symbols;

a plurality of weighting elements to weight corresponding ones of the delayed output symbols by the weighting factors determined based on the cross-correlations between the symbols to generate weighted output symbols; and

a summer to combine the weighted output symbols.

28. (Currently Amended) A method of reducing interference from a symbol of interest comprising:

despreading and combining unknown symbols received over a plurality of code channels in a plurality of RAKE receivers to produce RAKE output symbols, wherein each code channel comprises multiple paths;

determining cross-correlations between different symbols based on code cross-correlation between spreading codes for the different symbols;

combining a plurality of RAKE output symbols output from each RAKE receiver over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the symbols to generate a filtered output symbol for each RAKE receiver; and

combining the plurality of filtered output symbols to generate an estimate of the symbol of interest with reduced self-interference.

29. (Original) The method of claim 28 wherein determining cross-correlations between different symbols comprises estimating channel coefficients for each path of each code channel and determining the cross-correlations between the symbols based on the estimated channel coefficients.

30. (Original) The method of claim 28 wherein combining a plurality of the RAKE output symbols output from each RAKE receiver over the plurality of symbol periods using weighting factors determined based on the cross-correlations between the symbols to generate the plurality of filtered output symbols, comprises:

delaying the RAKE output symbols in a tapped delay line to generate a plurality of delayed output symbols;

weighting the delayed output symbols by weighting factors determined based on the cross-correlations between the symbols to generate a plurality of weighted symbols; and

summing the plurality of weighted symbols.

31. (Original) The method of claim 28 wherein despreading and combining symbols received over a plurality of code channels is performed in G-RAKE receivers.

32. (Currently Amended) A RAKE receiver for reducing interference from a symbol of interest comprising:

a plurality of RAKE fingers to despread a plurality of unknown symbols received over multiple paths of a multi-path channel;

a processor to determine cross-correlations between different symbols based on code cross-correlations between spreading codes for the different symbols; and

a combiner to combine despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate an estimate of the symbol of interest with reduced interference.

33. (Original) The RAKE receiver of claim 32 wherein a first one of said plurality of RAKE fingers has a delay corresponding to the symbol of interest and a second one of said plurality of RAKE fingers has a delay corresponding to an interfering symbol.

34. (Currently Amended) The RAKE receiver of claim 33 wherein said processor determines the ~~determines a~~ cross-correlations based on a cross-correlation determined between a symbol spreading code for the symbol of interest and a symbol spreading code for the interfering symbol.

35. (Original) The RAKE receiver of claim 34 wherein the combiner combines the symbol of interest with the interfering symbol using the cross-correlation to reduce the interference attributable to the interfering symbol from the symbol of interest.

36. (Original) The RAKE receiver of claim 32 wherein the combiner comprises a multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with a corresponding one of the plurality of RAKE fingers, to weight and combine despread symbols output by the corresponding RAKE fingers over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate a plurality of filtered output symbols; and

a filter combiner to combine the filtered output symbols.

37. (Original) The RAKE receiver of claim 36 wherein each linear transversal filter comprises:

a tapped delay line comprising a series of delay elements to delay the successive symbols output by the corresponding RAKE fingers to generate a set of delayed symbols during each symbol period;

a plurality of weighting elements to weight corresponding ones of the delayed symbols by weighting factors determined based on the cross-correlations to generate weighted output symbols; and

a summer to combine the weighted output symbols to generate each of the plurality of filtered output symbols.

38. (Original) The RAKE receiver of claim 32 wherein the combiner comprises:

a RAKE combiner to RAKE combine despread symbols received over different paths in the same symbol period to generate a combined RAKE output symbol for each path; and

a linear transversal filter to combine successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the different symbols to reduce the interference attributable to the interfering symbols from the symbol of interest to generate the estimate of the symbol of interest.

39. (Original) The RAKE receiver of claim 38 wherein each linear transversal filter comprises:

a tapped delay line comprising a series of delay elements to delay successive RAKE output symbols to generate a plurality of delayed RAKE output symbols during each symbol period;

a plurality of weighting elements to weight delayed RAKE output symbols by weighting factors determined based on the cross-correlations between the different symbols to generate weighted RAKE output symbols; and

a summer to combine the weighted RAKE output symbols.

40. (Original) The RAKE receiver of claim 32 wherein the RAKE fingers are divided into two or more groups, and wherein each group of RAKE fingers despreads symbols received over a different code channel.

41. (Original) The RAKE receiver of claim 40 wherein said combiner comprises:

a RAKE combiner for each group of RAKE fingers to combine the RAKE finger output symbols within the corresponding group to generate RAKE output symbols; and

a multi-channel filter to combine the RAKE output symbols to reduce the interference attributable to at least one interfering symbol from the symbol of interest, said multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with one of the code channels, to weight and combine successive RAKE output symbols output from a corresponding RAKE combiner over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate filtered output symbols; and

a summer to combine the filtered output symbols.

42. (Original) The RAKE receiver of claim 41 wherein said RAKE combiners are G-RAKE combiners.

43. (Original) The RAKE receiver of claim 42 wherein each linear transversal filter comprises:

a tapped delay line comprising a series of delay elements to delay successive RAKE output symbols output by the corresponding RAKE combiner to generate a plurality of delayed output symbols;

a plurality of weighting elements to weight the delayed output symbols by weighting factors determined based on the cross-correlations between the different symbols to generate weighted output symbols; and

a summer to combine the weighted output symbols.

44. (Original) The RAKE receiver of claim 32 wherein the cross-correlations between the different symbols form a correlation matrix used to determine the weighting factors.

45. (Original) The RAKE receiver of claim 44 wherein the correlation matrix of a first symbol period reuses a sub-matrix of the correlation matrix of a previous symbol period.

46. (Original) The RAKE receiver of claim 32 wherein the combiner further determines a scaling factor based on the channel estimate and multiplies the combined despread symbols by the scaling factor to improve a reliability of the estimate of the symbol of interest.

47. (Original) The RAKE receiver of claim 46 wherein the scaling factor is based on the weighting factors.

48. (Original) The RAKE receiver of claim 46 wherein the RAKE receiver receives traffic and pilot channel signals and wherein the scaling factor is based on a ratio of a power allocated to the traffic channel signal to a power allocated to the pilot channel signal.

49. (Currently Amended) A method of reducing interference from a symbol of interest comprising:

despreading unknown symbols received over at least one multi-path channel;

determining cross-correlations between different symbols based on code cross-correlations between spreading codes for the different symbols; and

combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between different symbols to generate an estimate of the symbol of interest with reduced interference.

50. (Currently Amended) The method of claim 49 wherein despreading the symbols received over the at least one multi-path channel comprises despreading the symbol of interest and at least one interfering symbol.

51. (Currently Amended) The method of claim 50 wherein determining code cross-correlations between the spreading codes for the different symbols comprises determining a code cross-correlation between a symbol spreading code for the symbol of interest and a symbol spreading code for the at least one interfering symbol.

52. (Original) The method of claim 51 wherein combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations

between the symbol spreading codes comprises combining the symbol of interest with the at least one interfering symbol.

53. (Original) The method of claim 49 wherein combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises filtering the despread symbols in a multi-channel filter.

54. (Original) The method of claim 53 wherein filtering the despread symbols in the multi-channel filter comprises:

filtering each of the despread symbols in a linear transversal filter to combine despread symbols received over a plurality of symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate a plurality of filtered output symbols; and

summing the plurality of filtered output symbols.

55. (Original) The method of claim 54 wherein filtering each of the despread symbols in a linear transversal filter comprises:

delaying the despread symbol received over the same path in a tapped delay line to generate a plurality of delayed symbols;

weighting each of the plurality of delayed symbols using a weighting factor determined based on the cross-correlations between the different symbols to generate a plurality of weighted symbols; and

summing the plurality of weighted symbols to generate each of the plurality of filtered output symbols.

56. (Original) The method of claim 49 wherein combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises:

RAKE combining the despread symbols received over different paths during the same symbol period to generate a combined RAKE output symbol during each symbol period; and

combining successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the different symbols.

57. (Original) The method of claim 56 wherein combining successive RAKE output symbols produced over a plurality of symbol periods comprises:

delaying the RAKE output symbol in a tapped delay line to generate a plurality of delayed output symbols during each symbol period;

weighting the delayed output symbols using weighting factors determined based on the cross-correlations between the different symbols to generate a plurality of weighted output symbols; and

summing the plurality of weighted output symbols.

58. (Currently Amended) The method of claim 49 wherein despreading the symbols received over the at least one multi-path channel comprises despreading symbols received over multiple paths of multiple code channels.

59. (Original) The method of claim 58 wherein combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises:

RAKE combining despread symbols received over each code channel to generate a combined RAKE output symbol for each code channel; and

combining the RAKE output symbols in a multi-channel filter.

60. (Original) The method of claim 59 wherein combining the RAKE output symbols in the multi-channel filter comprises:

filtering the RAKE output symbols for each code channel over a plurality of symbol periods in a linear transversal filter using weighting factors determined based on the cross-correlations between the different symbols to generate a filtered output symbol for each code channel during each symbol period; and

combining the filtered output symbols to generate the estimate of the symbol of interest.

61. (Original) The method of claim 60 wherein filtering the combined RAKE output symbols for each code channel over the plurality of symbol periods in the linear transversal filter using weighting factors determined based on the cross-correlations between the different symbols to generate a filtered output symbol for each code channel during each symbol period comprises:

delaying each of the RAKE output symbols in a tapped delay line to generate a plurality of delayed output symbols during each symbol period;

weighting the delayed output symbols by the weighting factors determined based on the cross-correlations between the different symbols to generate a plurality of weighted output symbols; and

summing the plurality of weighted output symbols.

62. (Original) The method of claim 49 wherein combining the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between different symbols comprises combining the despread symbols from different symbol periods using weighting factors determined based on a correlation matrix formed from the cross-correlations between different symbols.

63. (Original) The method of claim 62 further comprising reusing a sub-matrix of the correlation matrix of a first symbol period to form the correlation matrix of a second symbol period.

64. (Original) The method of claim 49 further comprising determining a scaling factor based on a channel estimate of at least one multi-path channel and multiplying the combined despread symbols by the scaling factor to improve a reliability of the estimate of the symbol of interest.

65. (Original) The method of claim 64 further comprises determining the scaling factor based on the weighting factors.

66. (Original) The method of claim 64 wherein the RAKE receiver receives traffic and pilot channel signals, the method further comprising determining the scaling factor based on a ratio of a power allocated to the traffic channel signal to a power allocated to a pilot channel signal.

67. (Currently Amended) A wireless communication device comprising:

at least one antenna to receive unknown symbols over at least one multi-path channel; and

a RAKE receiver to reduce interference attributable to unknown interfering symbols from an unknown symbol of interest, the RAKE receiver comprising:

a plurality of RAKE fingers to despread the unknown symbols received over the at least one multi-path channel;

a processor to determine cross-correlations between different symbols based on code cross-correlations between spreading codes for the different symbols; and

a combiner to combine despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate an estimate of a symbol of interest with reduced interference.

68. (Original) The wireless communication device of claim 67 wherein the combiner comprises a RAKE combiner to RAKE combine symbols received over a plurality of symbol periods.

69. (Original) The wireless communication device of claim 67 wherein said combiner comprises a multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with a corresponding one of the plurality of RAKE fingers, to weight and combine despread symbols output by the corresponding RAKE finger over a plurality of symbol periods using the weighting factors determined based on the cross-correlations between the different symbols to generate a plurality of filtered output symbols; and

a filter combiner to combine the filtered output symbols.

70. (Original) The wireless communication device of claim 67 wherein the combiner comprises:

a RAKE combiner to RAKE combine despread symbols received over different paths in the same symbol period to generate a combined RAKE output symbol for each path in each symbol period; and

a linear transversal filter to combine successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate the estimate of the symbol of interest.

71. (Original) The wireless communication device of claim 67 wherein the RAKE fingers are divided into two or more groups, and wherein each group of RAKE fingers despreads symbols received over a different code channel.

72. (Original) The wireless communication device of claim 71 wherein said combiner comprises:

a RAKE combiner for each group of RAKE fingers combines the RAKE finger output symbols within the corresponding group to generate RAKE output symbols; and

a multi-channel combiner to combine the RAKE output symbols to reduce the interference attributable to at least one interfering symbol from the symbol of interest, said multi-channel filter comprising:

a plurality of linear transversal filters, each of which is associated with one of the code channels, to weight and combine successive RAKE output symbols output from a corresponding RAKE combiner over a plurality of symbol periods using weighting factors determined based on the cross-

correlations between the different symbols to generate filtered output symbols; and

a summer to combine the filtered output symbols.

73. (Original) The wireless communication device of claim 72 wherein the RAKE combiner for each code channel comprises a G-RAKE combiner.

74. (Currently Amended) The wireless communication device of claim 67 wherein the processor determines code cross-correlations between spreading codes for different symbols by determining code cross-correlations between a symbol spreading code for the symbol of interest and a symbol spreading code for at least one interfering symbol.

75. (Original) The wireless communication device of claim 67 wherein the wireless communication device comprises a mobile terminal.

76. (Original) The wireless communication device of claim 67 wherein the wireless communication device comprises a base station.

77. (Currently Amended) A computer readable media stored in a wireless communication device for storing a set of instructions to reduce interference attributable to at least one interfering symbol from a symbol of interest, the set of instructions comprising:

instructions to despread unknown symbols received over at least one multi-path channel;

instructions to determine cross-correlations between different symbols based on code cross-correlations between spreading codes for the different symbols; and

instructions to combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate an estimate of a symbol of interest with reduced interference.

78. (Currently Amended) The program of claim 77 wherein the instructions to determine the code cross-correlations between the spreading codes for different symbols comprises instructions to determine code cross-correlations between a symbol spreading code for the symbol of interest and a symbol spreading code for at least one interfering symbol.

79. (Original) The program of claim 78 wherein the instructions to combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises instructions to combine the symbol of interest with the at least one interfering symbol.

80. (Original) The program of claim 77 wherein the instructions to combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises filtering the despread symbols in a multi-channel filter.

81. (Original) The program of claim 77 wherein the instructions to combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises:

instructions to RAKE combine the despread symbols received over different paths during the same symbol period to generate a combined RAKE output symbol during each symbol period; and

instructions to combine successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the different symbols.

82. (Original) The program of claim 77 wherein the instructions to combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols comprises:

instructions to RAKE combine despread symbols received over each code channel to generate a combined RAKE output symbol for each code channel; and

instructions to combine the RAKE output symbols in a multi-channel filter.

83. (Currently Amended) A circuit to implement a process to reduce interference attributable to at least one interfering symbol from a symbol of interest, the circuit comprising:

a receiver circuit to:

despread unknown symbols received over at least one multi-path channel;

determine cross-correlations between different symbols based on code cross-correlations between spreading codes for the different symbols; and

combine the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols to generate an estimate of a symbol of interest with reduced interference.

84. (Currently Amended) The circuit of claim 83 wherein the receiver circuit determines the code cross-correlations between the spreading codes for the different symbols by determining code cross-correlations between a symbol spreading code for the symbol of interest and a symbol spreading code for at least one interfering symbol.

85. (Original) The circuit of claim 84 wherein the receiver circuit combines the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols by combining the symbol of interest with the at least one interfering symbol.

86. (Original) The circuit of claim 83 wherein the receiver circuit combines the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols by filtering the despread symbols in a multi-channel filter.

87. (Original) The circuit of claim 83 wherein the receiver circuit combines the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols by:

RAKE combining the despread symbols received over different paths during the same symbol period to generate a combined RAKE output symbol during each symbol period; and

combining successive RAKE output symbols produced over a plurality of successive symbol periods using weighting factors determined based on the cross-correlations between the different symbols.

88. (Original) The circuit of claim 83 wherein the receiver circuit combines the despread symbols from different symbol periods using weighting factors determined based on the cross-correlations between the different symbols by:

RAKE combining despread symbols received over each code channel to generate a combined RAKE output symbol for each code channel; and

combining the RAKE output symbols in a multi-channel filter.

89. (Original) The circuit of claim 83 wherein the circuit comprises an application specific integrated circuit.